Physical Science Review Sheet Ch. 12 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Test Thursday Feb. 17**

1. What are the two basic categories of energy?
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The formula for gravitational potential energy is \_\_\_\_\_\_\_\_\_\_\_\_.
3. The formula for kinetic energy is \_\_\_\_\_\_\_\_\_\_.
4. The law of conservation of energy states that energy can be changed from one from to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Energy of position is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
6. Energy of motion is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
7. An apple hanging from the branch of a tree has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
8. When the apple falls, it picks up speed, and has increasing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
9. A child sitting at the top of a sliding board has stored energy, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
10. Once the child lets go , and begins to descend, it will have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy, since it is in motion.
11. The maximum kinetic energy of a roller coaster would be found when the car is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. The maximum potential energy of a person skiing would be when the person is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. The units for potential energy are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. Name the form of energy in each of these definitions:
    1. Periodic vibration of atomic particles, requires a medium. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    2. Energy carried by charged particles moving through a conductor. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    3. Energy whose principle source is the sun, does not need a medium.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    4. Energy associated with movement, position, or condition of physical objects; includes potential and kinetic energies \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    5. Energy stored between the bonds of atoms; found only in matter\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    6. Energy released or absorbed during nuclear changes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    7. Random vibration of atomic particles, requires a medium, powers many natural resources, associated with heat \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    8. Energy exerted by natural magnets and moving electrical charges \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. Be able to calculate the potential energy when given a problem.
    1. A 40 kg child climbs a tree and stops on a branch that is 4 meters from the ground. What is the child’s potential energy.
    2. If a 3 kg book is held 2 meters in the air, what is its potential energy?
16. Be able to explain how roller coasters work and where there is the maximum and minimum potential and kinetic energy.